REMARKS

We would like to thank the Examiner for granting the very productive interview of September 22nd for this application. Claims 10-21 were pending in this application. The examiner has rejected claims 10-21 under 35 U.S.C. §§ 102 and 112. Applicants have canceled claims 10, 11 and 15, and amended claims 12-14, and 16-21. Applicants have added new independent claim 22.

Applicants believe that new claim 22 addresses all of the Examiner's concerns, as discussed in the interview. For example, the current Official Action states, "it is unclear how the determination of the input shape-tuple...is performed." Official Action, p. 3. The element from claim 10 referenced by this statement recited "determining an input shape-tuple for each operand of a program expression of a high-level array-based language...." In response, applicants have clarified this element in new claim 22 to recite: "arranging an extent for each dimension of the operand into a shape-tuple for the operand." The Official Action also states, "it is unclear what automatically analyzing the use of each operand infers. *Id.* Applicants have clarified this element from claim 10, "automatically analyzing the use of each operand in the program expression" to the following element in new claim 22:

> identifying the program operator in the program expression;
>
> mapping the program operator to an associated shape-tuple operator, wherein the shape-tuple operator is based upon the shape semantics of the program operator;

Applicants have also addressed the concerns raised by the Examiner in the interview by adding "wherein the shape-tuple operator is based upon the shape semantics of the program operator" to the above "mapping the program operator" element, and also, adding "array shape" and "high-level array-based language" to the preamble, as suggested by the Examiner.

Applicants believe that these changes respond to the Official Action and the Examiner's concerns. Additionally, as discussed during the interview, claim 22 is patentably distinct from De Rose. The present invention uses shape-tuple notation and shape-tuple operators to represent the size and shape of variables. Appl. p. 7. These distinctions are recited in the claims as amended herein. Because the De Rose method neither uses shape-tuples, nor determines shape information, claim 22 is patentably distinct from De Rose.

Conclusion

In sum, Applicants respectfully submit that claims 12-14 and 16-22 as presented herein, are patentably distinguishable over the cited references (including references cited, but not applied). Therefore, Applicants request reconsideration and allowance of these claims.

Applicants respectfully invite Examiner to contact Applicants' representative at the number provided below if Examiner believes it will help expedite furtherance of this application.

RESPECTFULLY SUBMITTED,
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